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May 21, 2004

Via First Class Mail

Mail Stop 16
Director of the US Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Re: United States Patent Application
Inventor: Rohrbach
Entitled: FILTER APPARATUS FOR REMOVING SULFUR-
CONTAINING COMPOUNDS FROM LIQUID FUELS,
AND METHOD OF USING SAME
Serial No. 09/974,694
Filed: October 11, 2001
Attorney Docket No: H0001541

Sir:

Applicant hereby requests that a refund in the amount of \$488.00 be credited to Deposit Account Number 06-1130 under 37 CFR 1.26.

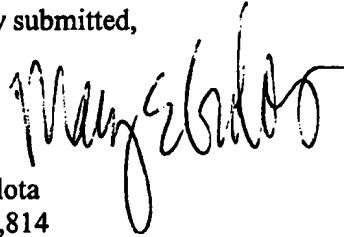
Applicant was overcharged in the amount of \$506.00 on April 13, 2004. The Patent and Trademark Office apparently counted claims previously withdrawn/cancelled. In the Amendment of October 29, 2003, Applicant requested and authorized the canceling of claims 13-20 in the event that the Restriction requirement was maintained. Because the Restriction Requirement was not removed, claims 13-20 should have been canceled, leaving claims 1-12 and 21-26 pending. New independent claims 27-29 were added in the Amendment of April 2, 2004, resulting in 5 pending independent claims, (i.e. 1, 21, 27, 28 and 29) and 16 dependent claims (i.e. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 22, 23, 24, 25, and 26) for a total of 21 pending claims. Since Applicant previously paid for 20 total claims and 5 independent claims, Applicant should only have been charged a fee of \$18.00 for one extra claim. Please remit \$488.00 to Deposit Account No. 06-1130, i.e. $[(344.00 + 162.00) - 18.00] = 488.00$.

We enclose herewith:

07/15/2004	EEKUBAY1	00000003	061130	09974694	<input checked="" type="checkbox"/>	Copy of Deposit Account Statement
01 FC:1202		18.00	DA		<input checked="" type="checkbox"/>	Copy of Amendment of October 29, 2003
					<input checked="" type="checkbox"/>	Copy of Amendment of April 2, 2004
					<input checked="" type="checkbox"/>	Acknowledgment Postcard
					<input checked="" type="checkbox"/>	Copy of Amendment Transmittal Letter
Adjustment date: 07/15/2004 EEKUBAY1						
04/13/2004	KBUTLER	00000002	061130	09974694		
01 FC:1201		344.00	CR			
02 FC:1202		162.00	CR			

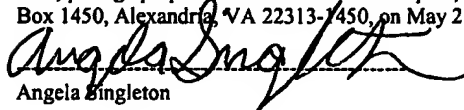
The Commissioner is hereby authorized to refund payment of the fees
associated with this communication to Deposit Account No. 06-1130.

Respectfully submitted,



Mary E. Golota
Reg. No. 36,814

I hereby certify that this paper is being deposited with the United States Postal Service via first class
mail, postage prepaid, addressed to: Mail Stop 16, Director of the US Patent and Trademark Office, P.O.
Box 1450, Alexandria, VA 22313-1450, on May 21, 2004.


Angela Singleton

860-286-2929
phone no.

Deposit Account Statement

For: Angela

STATUS AND EFT
BRANCH

2001 MAY 25 PM 3:55

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STATES A.C. 1.5.1
ERH00H

20 MAY 05 PM 4:00

April 2, 2004

Via First Class Mail

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: United States Patent Application
Inventor: Rohrbach
Entitled: FILTER APPARATUS FOR REMOVING SULFUR-
CONTAINING COMPOUNDS FROM LIQUID FUELS, AND
METHOD OF USING SAME
Serial No. 09/974,694
Filed: October 11, 2001
Attorney Docket No: H0001541

Sir:

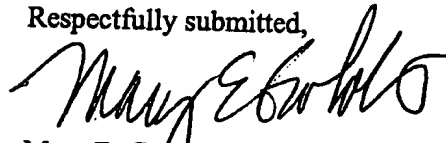
We enclose herewith:

- ☒ Amendment Transmittal Letter
- ☒ Response to Office Action
- ☒ 2 Acknowledgment Postcards

The Commissioner is hereby authorized to charge payment of the fees associated with this communication or credit any overpayment to Deposit Account No. 06-1130.

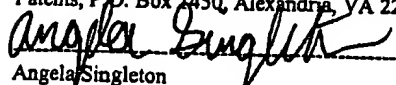
Applicant hereby petitions under 37 CFR 1.136 and other applicable rules to have the response period extended the number of months necessary to render the attached communication timely in the event a petition is required.

Respectfully submitted,



Mary E. Golota
Reg. No. 41,624

I hereby certify that this paper is being deposited with the United States Postal Service via first class mail, postage prepaid, addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 2, 2004.



Angela Singleton

STATUS AND FEE
DUE DATE

AMENDMENT TRANSMITTAL LETTER (Large Entity)	Docket No. H0001541
Applicant(s): Rohrbach et al.	

Serial No. 09/974,694	Filing Date October 11, 2001	Examiner C. Barry	Group Art Unit 1724
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Invention:
Filter Apparatus For Removing Sulfur-Containing Compounds From Liquid Fuels, And Methods Of Using A Same

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith is an amendment in the above-identified application.
The fee has been calculated and is transmitted as shown below.

CLAIMS AS AMENDED					
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST # PREV. PAID FOR	NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	15 -	20 21 =	1 0 x	\$18.00	\$0.00
INDEP. CLAIMS	5 -	5 =	0 x	\$86.00	\$0.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT					\$0.00

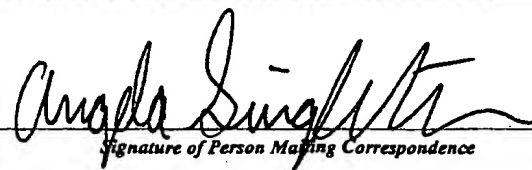
- ☒ No additional fee is required for amendment.
- ☐ Please charge Deposit Account No. _____ in the amount of _____
- ☐ A check in the amount of _____ to cover the filing fee is enclosed.
- ☒ The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 06-1130
 - ☒ Any additional filing fees required under 37 C.F.R. 1.16.
 - ☒ Any patent application processing fees under 37 CFR 1.17.



Signature

Dated: _____

Mary E. Golota
Reg. No. 36,814
201 W. Big Beaver Rd., Suite 370
Troy, MI 48084
Phone: 248-524-2300 ext. 3107

I certify that this document and fee is being deposited on April 2, 2004 with the U.S. Postal Service as first class mail under 37C.F.R. 1.8 and is addressed to the for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
	
Signature of Person Mailing Correspondence	
Angela Singleton	
Typed or Printed Name of Person Mailing Correspondence	

cc:

STATUS AND ENTRY
BRANCH

2001 MAY 25 PM 4:00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Ronald P. Rohrbach)	
)	
SERIAL NO.:	09/974,694)	ART UNIT
)	1724
FILED:	October 11, 2001)	
)	EXAMINER:
)	BARRY, CHESTER T.
)	
FOR:	FILTER APPARATUS FOR)	
	REMOVING SULFUR-)	
	CONTAINING COMPOUNDS)	
	FROM LIQUID FUELS, AND)	
	METHODS OF USING SAME)	

AMENDMENT

Mail Stop Non-Fee Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is in response to the outstanding Office Action of February 3, 2004,
wherein claims 1, 2, 7, and 10-12 were rejected and claims 3-6, 8 and 9 were objected to.
Reconsideration and removal of the rejections and
objections is respectfully requested in view of the
following amendments and/or remarks. Please
amend the application as follows:

H0001541

1

I certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, Alexandria, VA 22313-1450 on:	
April 2, 2004	
(Date of Deposit)	
Angela Singleton	
(Name of Person Mailing Paper)	
Angela Singleton	
Signature	

JUL 25 11 46 02

IN THE CLAIMS:

Please amend claims as follows:

1. (Currently Amended) A liquid fuel filter for removing sulfur-containing compounds from a liquid fuel, comprising:

a hollow housing body defining a chamber therein;

an inlet connected to the housing body and in fluid communication with the chamber thereof;

an outlet connected to the housing body and in fluid communication with the chamber thereof;

a liquid fuel filter media disposed in the housing chamber for filtering liquid fuel and for removing sulfur compounds therefrom; the liquid fuel filter media comprising:

a plurality of fibers; and

a sulfur-treating composition operatively associated with the fibers for reacting with sulfur-containing compounds.

2. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 1, wherein the sulfur-treating composition is selected for its ability to react with thiophenes.

3. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 1, wherein said ~~filter media~~liquid fuel filter media fibers comprise a plurality of shaped fibers having hollow channels formed therein.

4. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 3, wherein said sulfur-treating composition ~~comprises~~comprises a sorbent material disposed within the hollow channels of the fibers.

2011 MAY 05 09:09:00

5. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 4, wherein said sorbent material is selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.
6. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 1, wherein the sulfur-treating composition comprises an electron acceptor, and wherein the sulfur-treating composition is adapted to form a coordination complex with a sulfur-containing compound.
7. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 1, wherein the sulfur-treating composition comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.
8. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 4, wherein the sulfur-treating composition further comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.
9. (Currently Amended) The ~~fuel filter~~liquid fuel filter of claim 1, wherein the sulfur-treating composition comprises a liquid emulsion.
10. (Currently Amended) A ~~fuel filter~~liquid fuel filter for removing sulfur-containing compounds from a liquid fuel, comprising:
 - a thin-walled hollow housing body defining a chamber therein;
 - an inlet connected to the housing body and in fluid communication with the chamber thereof;
 - an outlet connected to the housing body and in fluid communication with the chamber thereof;

SEP 15 1992

a ~~filter-media~~liquid fuel filter media disposed in the housing chamber for filtering liquid fuel and for removing sulfur-containing compounds therefrom; the ~~filter-media~~liquid fuel filter media comprising:

- a plurality of substrate particles; and
- a reagent operatively associated with a plurality of particles selected from said substrate particles, said reagent being capable of reacting with thiophenes.

11. (Currently Amended) The liquid fuel filter of claim 10, wherein said substrate particles comprise a substance selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.

12. (Currently Amended) The liquid fuel filter of claim 10, wherein said reagent is selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

13. (withdrawn) A system for reducing a concentration of sulfur-containing compounds in a liquid fuel, comprising: a metering pump for adding a precipitating agent to said fuel at a first location; and a filter for removing a precipitate from said fuel downstream of said metering pump, said filter comprising: a thin-walled hollow housing body defining a chamber therein; an inlet connected to the housing body and in fluid communication with the chamber thereof; an outlet connected to the housing body and in fluid communication with the chamber thereof; and a ~~filter-media~~liquid fuel filter media disposed in the housing chamber for filtering precipitate from said liquid fuel and for thereby removing sulfur-containing compounds therefrom.

14. (withdrawn) A method of filtering fuel, comprising the steps of:

- a) transferring the fuel from a reservoir through a fuel line and to a fuel ~~filter~~liquid fuel filter;

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b) treating the fuel by passing it through the ~~fuel filter~~liquid fuel filter and over a ~~filter-media~~liquid fuel filter media housed therein, said ~~filter-media~~liquid fuel filter media comprising a reactant selected for its ability to react with thiophenes and reduce the concentration thereof in said fuel; whereby the concentration of sulfur-containing compounds in the fuel is reduced.

15. (withdrawn) The method of claim 14, wherein the ~~filter-media~~liquid fuel filter media comprises a plurality of shaped fibers having hollow channels formed therein.

16. (withdrawn) The method of claim 15, wherein a plurality of solid particles are disposed within the hollow channels of the fibers.

17. (withdrawn) The method of claim 14, wherein said ~~filter-media~~liquid fuel filter media comprises a plurality of substrate particles comprising a substance selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.

18. (withdrawn) The method of claim 17, wherein said substrate particles are operatively associated with a substance selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

19. (withdrawn) The method of claim 18, wherein said ~~filter-media~~liquid fuel filter media further comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

20. (withdrawn) A method of reducing a concentration of sulfur-containing compounds from a liquid fuel, comprising:

adding a precipitating agent to said fuel at a first location between a fuel storage tank and a fuel application, whereby a sulfur-containing compound in said fuel is

precipitated out of solution therein; and passing said fuel through a ~~fuel filter~~liquid fuel filter to remove said precipitate from said fuel.

21. (withdrawn) A method of filtering fuel of a reservoir in fluid communication with a ~~fuel filter~~liquid fuel filter, comprising:

transferring fuel from the reservoir to the ~~fuel filter~~liquid fuel filter;

passing fuel through a ~~filter-media~~liquid fuel filter media disposed within the ~~fuel filter~~liquid fuel filter, said ~~filter-media~~liquid fuel filter media comprising: a sulfur-treating composition operatively associated with said ~~filter-media~~liquid fuel filter media and for reacting with sulfur-containing compounds, wherein the concentration of sulfur-containing compounds in the fuel is reduced by passing the fuel through said ~~filter-media~~liquid fuel filter media.

22. (withdrawn) The method of claim 21, wherein the ~~filter-media~~liquid fuel filter media comprises a plurality of shaped fibers having hollow channels formed therein.

23. (withdrawn) The method of claim 22, wherein a plurality of solid particles are disposed within the hollow channels of the fibers.

24. (withdrawn) The method of claim 21, wherein said ~~filter-media~~liquid fuel filter media comprises a plurality of substrate particles comprising a substance selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.

25. (withdrawn) The method of claim 24, wherein said substrate particles are operatively associated with a substance selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

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26. (withdrawn) The method of claim 25, wherein said ~~filter-media~~liquid fuel filter media further comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

27. (New) A fuel filter for removing sulfur-containing compounds from a liquid fuel, comprising:

- a hollow housing body defining a chamber therein;
- an inlet connected to the housing body and in fluid communication with the chamber thereof;
- an outlet connected to the housing body and in fluid communication with the chamber thereof;
- a fuel filter media disposed in the housing chamber for filtering liquid fuel and for removing sulfur compounds therefrom; the fuel filter media comprising:
 - a plurality of shaped fibers having hollow channels formed therein;
- and
- a sulfur-treating composition operatively associated with the fibers.

28. (New) A fuel filter for removing sulfur-containing compounds from a liquid fuel, comprising:

- a hollow housing body defining a chamber therein;
- an inlet connected to the housing body and in fluid communication with the chamber thereof;
- an outlet connected to the housing body and in fluid communication with the chamber thereof;
- a fuel filter media disposed in the housing chamber for filtering liquid fuel and for removing sulfur compounds therefrom; the fuel filter media comprising:
 - a plurality of fibers; and

20 MAY 25 PM 4:02

a sulfur-treating composition operatively associated with the fibers,
wherein the sulfur-treating composition comprising an electron acceptor,

29. (New) A fuel filter for removing sulfur-containing compounds from a liquid fuel,
comprising:

a hollow housing body defining a chamber therein;

an inlet connected to the housing body and in fluid communication with
the chamber thereof;

an outlet connected to the housing body and in fluid communication with
the chamber thereof;

a fuel filter media disposed in the housing chamber for filtering liquid fuel
and for removing sulfur compounds therefrom; the fuel filter media comprising:

a plurality of fibers; and

a sulfur-treating composition comprising a liquid emulsion
operatively associated with the fibers.

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REMARKS

1. Rejection of claims 1, 2, 7, and 10-12 under 35 U.S.C. 102(e) as anticipated by Grieve et al., U.S. Patent Application Publication US 2002/0136936 A1, hereafter "Grieve".

It is the PTO's position that paragraph [0040] and Figure 5 of Grieve disclose a filter comprising a hollow housing body defining a chamber therein; an inlet connected to the housing body and in fluid communication with the chamber thereof; an outlet connected to the housing body and in fluid communication with the chamber thereof; and a filter media disposed in the housing chamber, the filter media comprising: a plurality of fibers; and a sulfur-treating composition operatively associated with the fibers.

Applicants greatly appreciate the detailed basis of rejection but must respectfully disagree.

Grieve discloses a trap for an energy conversion device, i.e., a solid oxide fuel cell (SOFC). *See Grieve, Abstract and paragraphs [0006]-[0009].* Grieve expressly indicates that the disclosed trap is "...for use with energy conversion devices comprising a trapping system comprising a filter element and a reforming system. The reforming system is fluidly coupled to the trapping system, with said trapping system positioned after said reforming system." *Grieve, paragraph [0011].* As disclosed in paragraph [0009], a reforming system or reformer converts an unreformed fuel to hydrogen and carbon monoxide. It will be appreciated by those of skill in the energy conversion device art that the reformat produced by a reformer is thus a mixture of one or more gases.

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As indicated in Figure 3 and paragraph [0036] of Grieve, the regenerable particulate matter trap 110 is positioned so that the sole input to the trap 110 is the gaseous reformat leaving the reformer 100. Thus, Grieve's regenerable particulate matter trap 110 only works with gases.

In contrast, Applicants' claimed invention is a liquid fuel filter. Independent claims 1 and 10 have been amended to more clearly define the required structural element of a liquid fuel filter media in the claimed liquid fuel filter. Support for these amendments may be found throughout the Specification.

Applicants have carefully reviewed MPEP 2111 and 2114 but can find no support for the PTO's construction of claims 1 and 10 that eliminates the word 'fuel' before 'filter'. It is respectfully submitted that 'fuel filter' is not a statement of intended use but rather defines what the claimed invention is. Applicants can find no requirement that the invention be defined solely via a single noun.

Moreover, one of skill in the art can find nothing in Grieve to suggest that the regenerable particulate matter trap 110 would function with a liquid input.

To constitute anticipation, all material elements of a claim must be found in one prior art source. In re Marshall, 198 U.S.P.Q. 344 (C.C.P.A. 1978). This standard has not been met with the disclosures of Grieve. In particular, the regenerative particulate trap of Grieve is not a liquid fuel filter and fails to disclose the required element of a liquid fuel filter media.

Reconsideration and removal of the rejection is respectfully requested as to amended independent claims 1 and 10. Favorable action is also requested as to

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dependent claims 2, 7, and 11-12 since these claims incorporate the limitations of amended independent claims 1 and 10.

2. Objection to claims 3-6, and 8-9.

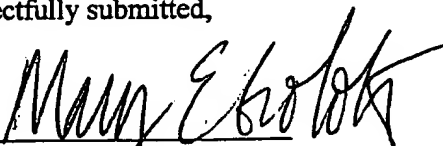
Claim 4 has been corrected with respect to the misspelling of "comprises".

Applicants appreciate the PTO's indication that the subject matter of claim 3-6 and 8-9 would be allowable if presented in independent form and amended to overcome any nonart rejections/objections. New claims 27-29 reflect the respective incorporation of the limitations of dependent claims 3, 6, and 9 into independent claim 1. Favorable action of all pending claims is respectfully requested. If for any reason the Examiner feels that consultation with Applicant's attorney would be helpful in the advancement of the prosecution, he is invited to call the telephone number below for an interview.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

By:


Mary E. Golota
Reg. No. 36,814

Date: April 2, 2004
Telephone No. 248-524-2300
H0001541

STATUS AND
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2003 OCT 29 PM 4:02

October 29, 2003

Via First Class Mail

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: United States Patent Application
Inventor: Rohrbach, et al.
Entitled: FILTER APPARATUS FOR REMOVING SULFUR
-CONTAINING COMPOUNDS FROM LIQUID FUELS, AND
METHODS OF USING SAME
Serial No. 09/974,694
Filed: October 11, 2001
Attorney Docket No: H-0001541

Sir:

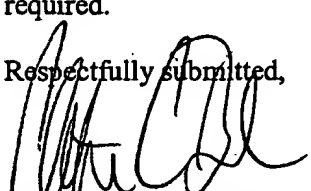
We enclose herewith:

- ☒ Amendment Transmittal Letter
- ☒ Response to Restriction Requirement
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The Commissioner is hereby authorized to charge payment of the fees associated with this communication or credit any overpayment to Deposit Account No. 06-1130.

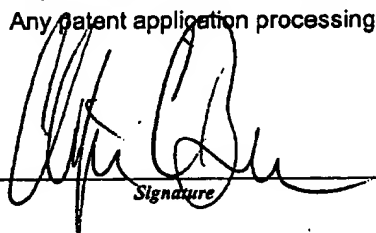
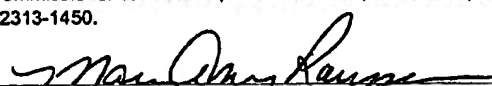
Applicant hereby petitions under 37 CFR 1.136 and other applicable rules to have the response period extended the number of months necessary to render the attached communication timely in the event a petition is required.

Respectfully submitted,


Christopher C. Boehm
Reg. No. 41,624

I hereby certify that this paper is being deposited with the United States Postal Service via first class mail, postage prepaid, addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on October 29, 2003.


Mary Anne Rousseau

AMENDMENT TRANSMITTAL LETTER (Large Entity)			Docket No. H-0001541		
Applicant(s): Rohrbach, et al.					
Serial No. 09/974,694	Filing Date October 11, 2001	Examiner Barry, Chester T.	Group Art Unit 1724		
Invention: FILTER APPARATUS FOR REMOVING SULFUR-CONTAINING COMPOUNDS FROM LIQUID FUELS, AND METHODS OF USING SAME					
<u>TO THE COMMISSIONER FOR PATENTS:</u>					
Transmitted herewith is an amendment in the above-identified application. The fee has been calculated and is transmitted as shown below.					
CLAIMS AS AMENDED					
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST # PREV. PAID FOR	NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	20 -	20 =	0 x	\$18.00	\$0.00
INDEP. CLAIMS	5 -	5 =	0 x	\$86.00	\$0.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT					\$0.00
<input type="checkbox"/> No additional fee is required for amendment. <input type="checkbox"/> Please charge Deposit Account No. _____ in the amount of _____ <input type="checkbox"/> A check in the amount of _____ to cover the filing fee is enclosed. <input checked="" type="checkbox"/> The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 06-1130 <input checked="" type="checkbox"/> Any additional filing fees required under 37 C.F.R. 1.16. <input type="checkbox"/> Any patent application processing fees under 37 CFR 1.17.					
 _____ Signature			Dated: October 29, 2003		
Christopher C. Boehm Reg. No. 41,624 Customer No. 23413 Phone: 248-524-2300			<div style="border: 1px solid black; padding: 5px;"> I certify that this document and fee is being deposited on October 29, 2003 with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.  _____ Signature of Person Mailing Correspondence Mary Anne Rousseau _____ Typed or Printed Name of Person Mailing Correspondence </div>		
cc:					

STATES PATENT
OFFICE

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Rohrbach, et al.)	
)	
SERIAL NO.:	09/974,694)	ART UNIT
)	1724
FILED:	October 11, 2001)	
)	EXAMINER:
)	Barry, Chester T.
)	
FOR:	FILTER APPARATUS FOR REMOVING)	
	SULFUR-CONTAINING COMPOUNDS)	
	FROM LIQUID FUELS, AND METHODS)	
	OF USING SAME)	

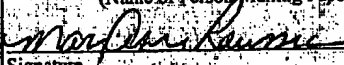
RESPONSE TO RESTRICTION REQUIREMENT

Box: Non Fee Amendment
Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the outstanding Office Action dated September 29, 2003,

Applicants respond as follows:

I certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:	
October 29, 2003	
(Date of Deposit)	
Mary Anne Rousseau	
(Name of Person Mailing Paper)	
	10/29/2003
Signature	Date

H-0001541

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IN THE CLAIMS:

Claim 1. (original) A fuel filter for removing sulfur-containing compounds from a liquid fuel, comprising:

a hollow housing body defining a chamber therein; an inlet connected to the housing body and in fluid communication with the chamber thereof;

an outlet connected to the housing body and in fluid communication with the chamber thereof; a filter media disposed in the housing chamber for filtering liquid fuel and for removing sulfur compounds therefrom; the filter media comprising:

a plurality of fibers; and

a sulfur-treating composition operatively associated with the fibers for reacting with sulfur-containing compounds.

Claim 2. (original) The fuel filter of claim 1, wherein the sulfur-treating composition is selected for its ability to react with thiophenes.

Claim 3. (original) The fuel filter of claim 1, wherein said filter media fibers comprise a plurality of shaped fibers having hollow channels formed therein.

Claim 4. (original) The fuel filter of claim 3, wherein said sulfur-treating composition comprises a sorbent material disposed within the hollow channels of the fibers.

Claim 5. (original) The fuel filter of claim 4, wherein said sorbent material is selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.

Claim 6. (original) The fuel filter of claim 1, wherein the sulfur-treating composition comprises an electron acceptor, and wherein the sulfur-treating composition is adapted to form a coordination complex with a sulfur-containing compound.

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Claim 7. (original) The fuel filter of claim 1, wherein the sulfur-treating composition comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

Claim 8. (original) The fuel filter of claim 4, wherein the sulfur-treating composition further comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

Claim 9. (original) The fuel filter of claim 1, wherein the sulfur-treating composition comprises a liquid emulsion.

Claim 10. (original) A fuel filter for removing sulfur-containing compounds from a liquid fuel, comprising: a thin-walled hollow housing body defining a chamber therein; an inlet connected to the housing body and in fluid communication with the chamber thereof; an outlet connected to the housing body and in fluid communication with the chamber thereof; a filter media disposed in the housing chamber for filtering liquid fuel and for removing sulfur-containing compounds therefrom; the filter media comprising: a plurality of substrate particles; and a reagent operatively associated with a plurality of particles selected from said substrate particles, said reagent being capable of reacting with thiophenes.

Claim 11. (original) The filter of claim 10, wherein said substrate particles comprise a substance selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.

Claim 12. (original) The filter of claim 10, wherein said reagent is selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

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Claim 13. (original) A system for reducing a concentration of sulfur-containing compounds in a liquid fuel, comprising: a metering pump for adding a precipitating agent to said fuel at a first location; and a filter for removing a precipitate from said fuel downstream of said metering pump, said filter comprising: a thin-walled hollow housing body defining a chamber therein; an inlet connected to the housing body and in fluid communication with the chamber thereof; an outlet connected to the housing body and in fluid communication with the chamber thereof; and a filter media disposed in the housing chamber for filtering precipitate from said liquid fuel and for thereby removing sulfur-containing compounds therefrom.

Claim 14. (original) A method of filtering fuel, comprising the steps of:

a) transferring the fuel from a reservoir through a fuel line and to a fuel filter;

b) treating the fuel by passing it through the fuel filter and over a filter media housed therein, said filter media comprising a reactant selected for its ability to react with thiophenes and reduce the concentration thereof in said fuel; whereby the concentration of sulfur-containing compounds in the fuel is reduced.

Claim 15. (original) The method of claim 14, wherein the filter media comprises a plurality of shaped fibers having hollow channels formed therein.

Claim 16. (original) The method of claim 15, wherein a plurality of solid particles are disposed within the hollow channels of the fibers.

Claim 17. (original) The method of claim 14, wherein said filter media comprises a plurality of substrate particles comprising a substance selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.

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Claim 18. (original) The method of claim 17, wherein said substrate particles are operatively associated with a substance selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

Claim 19. (original) The method of claim 18, wherein said filter media further comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

Claim 20. (original) A method of reducing a concentration of sulfur-containing compounds from a liquid fuel, comprising:

adding a precipitating agent to said fuel at a first location between a fuel storage tank and a fuel application, whereby a sulfur-containing compound in said fuel is precipitated out of solution therein; and passing said fuel through a fuel filter to remove said precipitate from said fuel.

Please add new claims 21-26 as follows:

Claim 21. (new) A method of filtering fuel of a reservoir in fluid communication with a fuel filter, comprising:

transferring fuel from the reservoir to the fuel filter;
passing fuel through a filter media disposed within the fuel filter, said filter media comprising: a sulfur-treating composition operatively associated with said filter media and for reacting with sulfur-containing compounds, wherein the concentration of sulfur-containing compounds in the fuel is reduced by passing the fuel through said filter media.

Claim 22. (new) The method of claim 21, wherein the filter media comprises a plurality of shaped fibers having hollow channels formed therein.

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Claim 23. (new) The method of claim 22, wherein a plurality of solid particles are disposed within the hollow channels of the fibers.

Claim 24. (new) The method of claim 21, wherein said filter media comprises a plurality of substrate particles comprising a substance selected from the group consisting of activated carbon, zeolites, clay, silica gel, silicon dioxide, aluminum oxide and mixtures thereof.

Claim 25. (new) The method of claim 24, wherein said substrate particles are operatively associated with a substance selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

Claim 26. (new) The method of claim 25, wherein said filter media further comprises a reagent selected from the group consisting of metals, metal oxides, metallic salts, organometallic compounds, catalysts, and oxidizing agents.

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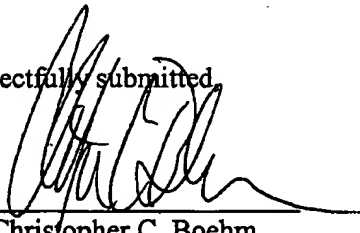
If however, the restriction requirement is maintained applicants request and authorize the canceling of claims 13-20 corresponding to groups II and III in order to avoid additional claim fees as the present amendment adds new claims 21-26.

If for any reason the Examiner feels that consultation with Applicant's attorney would be helpful in the advancement of the prosecution, he is invited to call the telephone number below for an interview.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

By:


Christopher C. Boehm
Reg. No. 41,624

Date: October 29, 2003
Customer No. 23413
Telephone No. 248-524-2300